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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,894	09/05/2000	Tsutae Shinoda	522.1919C4	7583

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EXAMINER
SANTIAGO, MARICELI

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 08/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	09/654,894	SHINODA ET AL.	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28,31,33-37,40,42-46,49,51-57,59-63,66,68-72,75,77-81,84 and 86-92* is/are rejected.

7)☒ Claim(s) *29,30,32,38,39,41,47,48,50,58,64,65,67,73,74,76,82,83 and 85* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *08/010,169* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

The Amendment, filed on September 5, 2000, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-27 has been entered.

The Amendment, filed on September 18, 2001, has been entered and acknowledged by the Examiner.

The Amendment, filed on January 10, 2002, has been entered and acknowledged by the Examiner.55

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 46 and 81 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 46 and 81 recite the limitation "a first substrate" in line 8 and 6, respectively, this limitation renders the claims indefinite, since where a claim directed to a device can be read to include the same element twice, it is considered indefinite. *Ex parte Kristensen*, 10 USPQ2d 1701 (Bd. Pat. App. & Inter. 1989).

Claim 46 recites the limitation "a first direction" in line 9, this limitation renders the claim indefinite, since where a claim directed to a device can be read to include the same element twice, it is considered indefinite. *Ex parte Kristensen*, 10 USPQ2d 1701 (Bd. Pat. App. & Inter. 1989).

Claims 46 and 81 recite the limitation "a second direction" in line 14 and 11, respectively, this limitation renders the claims indefinite, since where a claim directed to a device can be read to include the same element twice, it is considered indefinite. *Ex parte Kristensen*, 10 USPQ2d 1701 (Bd. Pat. App. & Inter. 1989).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 28, 31, 33, 37, 40, 42, 56, 57, 59, 60, 63, 66, 68, 72, 75, 77 and 90 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyake et al. (US 5,086,297).

Regarding claims 28, 37, 56, 63 and 72, Miyake discloses a method of forming a phosphor layer (10) in a discharge cell of a surface discharge type plasma display panel, wherein a pair of barriers (3) extending in a first direction in a first substrate (2) are spaced apart in parallel relationship in a second direction, transverse to the first direction, and define a cavity therebetween, bounded by respective opposing sidewalls (3a) of the pair of barriers (3) and extending commonly therewith in the first direction, plural address electrodes (5) being disposed on the first substrate (2) and extending in the first direction, the method comprising depositing a phosphor paste (10) within the cavity, the phosphor paste having a content of phosphor in a range of from 10% to 50%, by weight, and firing the phosphor paste to form the phosphor layer (Column 6, lines 7-30).

Regarding claims 31, 40, 57, 66 and 75, Miyake discloses a method wherein the phosphor paste further comprises a thickening agent and an organic solvent (Column 6, lines 22-30).

Regarding claims 33, 42, 59, 68 and 77, Miyake discloses a method wherein the organic solvent is alcohol (Column 6, lines 22-30).

Regarding claims 60 and 90, Miyake discloses a method wherein the at least a portion of the address electrode is disposed within the bottom of the cavity.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 34-36, 43-45, 69-71 and 78-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al. (US 5,086,297) in view of Sano (US 5,155,414).

Regarding claims 34-36, 43-45, 69-71 and 78-80, Miyake discloses the claimed invention except for the limitations of applying the phosphor paste on the first substrate within the cavity and firing same so as to from the phosphor layer covering a bottom portion of the cavity including the address electrode and extending continuously from the bottom of the cavity onto and covering the respective barrier sidewall defining the cavity, the phosphor layer formed on the opposing sidewalls of the adjacent barriers in a height not exceeding a height of the barriers. However, in the same field of endeavor, Sano discloses a surface discharge type plasma display panel comprising a discharge cell wherein the phosphor is applied so as to from the phosphor layer covering a bottom portion of the cavity including the address electrode, and

extending continuously from the bottom of the cavity onto and covering the respective barrier sidewall defining the cavity, the phosphor layer formed on the opposing sidewalls of the adjacent barriers in a height not exceeding a height of the barriers. Sano's teaching of the entire surface cavity being covered by the phosphor is effective in increasing the surface of the phosphor layer and therefore in realizing a high brightness display panel (Column 5, lines 48-55). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the phosphor layer covering the entire surface of the cavity as disclosed by Sano in the method of Miyake in order to effectively increase the surface of the phosphor layer and therefore obtain a high brightness display panel.

Claims 46, 49, 51, 55, 61, 62, 81, 84, 86 and 91-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al. (US 5,086,297) in view of Sano et al. (US 5,107,182).

Regarding claims 46, 55 and 81, Miyake discloses a method of forming phosphor layers in an array of discharge cells formed on a first substrate (2) of a plasma display panel of a surface discharge type, the array comprising plural columns, in a first direction, and plural rows in a second direction transverse to the first direction, of plural unit luminescent areas, each unit luminescent are comprising a respective set of common number of discharge cells, wherein each discharge cell comprises, a cavity bounded by respective opposing and spaced sidewalls (3a) of a pair of parallel barriers (3) formed on the first substrate (2), the cavity extending commonly with the pair of barriers in the first direction, an address electrode (5) on the first substrate and extending in the first direction, display electrodes (4) formed in parallel, spaced relationship on a surface of a second substrate (1) and positioned in opposed relationship with the barriers (3), the display electrodes (3) extending in the second direction, transversely to the barriers (3) and the first direction, and the display electrodes (4) defining an individual display

cell within the cavity the method comprising depositing a phosphor paste (10) within the cavity, the phosphor paste having a content of phosphor in a range of from 10% to 50%, by weight, and firing the phosphor paste to form the phosphor layer (Column 6, lines 7-30), to produce a selected thickness of the phosphor layer in a range of from 10 to 50 microns, respectively. Miyake fails to disclose the limitation of the plasma display panel discharge cell comprising a pair of display electrodes further covered by an insulating layer. However, in the same field of endeavor, Sano discloses a plasma display panel wherein the discharge cell comprises a pair of display electrodes (25 and 26) covered by an insulating layer (20) in order to provide a surface discharge plasma display panel of the dot matrix type wherein the discharge is generated between the address electrode and one of the display electrode and the surface discharge is maintained between the pair of display electrodes (25 and 26), furthermore, the insulating layer (20) provides protection to the display electrodes against any damage from the discharge (Column 1, lines 13-53). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the pair of display electrodes disclosed by Sano in the plasma display panel of Miyake in order to provide a plasma display panel of the dot matrix type wherein the discharge is generated between the address electrode and one of the display electrode and the surface discharge is maintained between the pair of display electrodes and further provide an insulating layer for protection of the display electrodes against any damage from the discharge.

Regarding claims 49 and 84, Miyake discloses a method wherein the phosphor paste further comprises a thickening agent and an organic solvent (Column 6, lines 22-30).

Regarding claims 51 and 86, Miyake discloses a method wherein the organic solvent is alcohol (Column 6, lines 22-30).

Regarding claims 61, 62 and 91-92, Miyake discloses a method wherein the at least a portion of the address electrode (5) is disposed within or disposed near the bottom of the cavity (Fig. 14).

Claims 52-54 and 87-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al. (US 5,086,297) in view of Sano et al. (US 5,107,182), and further in view of Sano (US 5,155,414).

Regarding claims 52-54 and 87-89, Miyake-Sano '182 disclose the claimed invention except for the limitations of applying the phosphor paste on the first substrate within the cavity and firing same so as to from the phosphor layer covering a bottom portion of the cavity including the address electrode and extending continuously from the bottom of the cavity onto and covering the respective barrier sidewall defining the cavity, the phosphor layer formed on the opposing sidewalls of the adjacent barriers in a height not exceeding a height of the barriers. However, in the same field of endeavor, Sano '414 discloses a surface discharge type plasma display panel comprising a discharge cell wherein the phosphor is applied so as to from the phosphor layer covering a bottom portion of the cavity including the address electrode, and extending continuously from the bottom of the cavity onto and covering the respective barrier sidewall defining the cavity, the phosphor layer formed on the opposing sidewalls of the adjacent barriers in a height not exceeding a height of the barriers. Sano's teaching of the entire surface cavity being covered by the phosphor is effective in increasing the surface of the phosphor layer and therefore in realizing a high brightness display panel (Column 5, lines 48-55). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the phosphor layer covering the entire surface of the

cavity as disclosed by Sano '414 in the method of Miyake-Sano '182 in order to effectively increase the surface of the phosphor layer and therefore obtain a high brightness display panel.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 28, 34-37, 43-46, 52-54, 56, 60, 61, 63, 69-72, 78-81 and 87-92 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 5,674,553 to Shinoda et al. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

U.S. Application SN 09/654,894	U.S. Patent No. 5,674,553	Reasons for rejection under obviousness-type double patenting
Claims 28, 37, 46, 56, 63, 72 and 81	Claim 3	Patent '553 claims a process for manufacturing a surface discharge type plasma display device comprising first and second substrates defining a discharge space therebetween and producing a display area of first and second dimensions in respective first and second orthogonal directions, a plurality of pairs of display electrodes formed on the main surface of the first substrate and extending in parallel relationship in the first direction, a plurality of address electrodes formed on the main surface of the second substrate and extending in parallel

		relationship in the second direction and a plurality of phosphor layers formed as respective, plural and parallel stripes extending in the second direction respectively in association with the plurality of address electrodes, forming barriers on the main surface of the second substrate extending in parallel in the second direction and spaced in the first direction, thereby dividing and separating said discharge space into elongated discharge spaces between respective pairs of adjacent barriers, filling said elongated discharge spaces with respective phosphor pastes corresponding to the respective luminescent colors of the associated phosphor layer stripes, the phosphor paste comprising phosphor in an amount of 10 to 50% by weight, and firing said phosphor pastes to form each said phosphor layer stripe covering substantially the entire surfaces of the side walls of said respective pair of adjacent barriers.
Claims 34, 43, 52, 69, 78 and 87	Claim 3	Patent '553 claims a method further comprising applying the phosphor paste within the cavity and firing the same so as to form the phosphor layer covering the bottom portion of the cavity including the address electrode.
Claim 35, 44, 53, 70, 79 and 88	Claim 3	Patent '553 claims a method further comprising applying the phosphor paste within the cavity and firing same so as to form the phosphor stripe extending continuously from the bottom of the cavity onto, and covering the respective opposing sidewalls of the barrier defining the cavity.
Claim 36, 45, 54, 71, 80 and 89	Claim 3	Patent '553 claims a method wherein the phosphor layer is formed on the opposing sidewalls of the adjacent barriers in a height not exceeding a height of the barriers.
Claims 60, 61 and 90-92	Claim 3	Patent '553 claims a method wherein the at least a portion of the address electrode is disposed within or near the bottom of the cavity.

Allowable Subject Matter

Claims 29, 30, 32, 38, 39, 41, 47, 48, 50, 58, 64, 65, 67, 73, 74, 76, 82, 83 and 85 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (703) 305-1083. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382. Additionally, the following fax phone numbers can be used during the prosecution of this application (703) 872-9318 (for response before a Final Action) and (703) 872-9319 (for response after a Final Action).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mariceli 7/31/03
Mariceli Santiago
Patent Examiner
Art Unit 2879

Kenneth J. Ramsey

KENNETH J. RAMSEY
PRIMARY EXAMINER